

Zoonosis Trivia

Test your knowledge of Zoonotic Disease Trivia by answering the following questions.
The answers are listed below.

1. What animal species is responsible for the most human rabies deaths worldwide?
2. True or False. Approximately 75% of recently emerging infections diseases affecting humans are diseases of animal origin, and about 60% of human pathogens are zoonotic.
3. What are the two most common causes of hospital acquired infections in U.S. hospitals?
4. True or False. Chikungunya and dengue viruses are transmitted by the same mosquitoes, *Aedes aegypti* and *Aedes albopictus*.
5. Are non-human primates (i.e. Marmosets, capuchins) and wolf-hybrids considered dangerous wild animals in unincorporated Harris County?
6. What is the name of the virus that is transmitted by mosquitoes and causes about 1 in 5 infected people to develop a fever, with 1% developing a serious neurologic illness?
7. What is the most commonly reported vector-borne disease in the U.S., and was the 7th most common Nationally Notifiable Disease in 2012?
8. What is the most common organism associated with cat bites and can cause cellulitis, a potentially serious skin infection?
9. True or False. In unincorporated Harris County, the sale of live animals is banned if it occurs on a public highway or road, in the right-of-way of a public highway or road, or in a parking lot.
10. What species of animals have tested positive for rabies in unincorporated Harris County since 2011?

Answer:: 1. Dogs 2. True 3. MRSA (methicillin-resistant *Staphylococcus aureus*) and *C. diff* (*Clostridium difficile*) 4. True 5. Yes 6. West Nile Virus 7. Lyme Disease 8. *Pasteurella* 9. True 10. Bat, Skunk and Horses

Harris County Public Health & Environmental Services
Veterinary Public Health
612 Canino Rd
Houston, Texas 77076

Harris County

HCPHES

Public Health & Environmental Services

www.hcphe.org

Veterinary Public Health Division

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612 Canino Rd., Houston, Texas 77076

Phone: 281-999-3191 Fax: 281-847-1911

Your Zoonosis Connection

Rabies in Harris County: 2003-2013

Rabies vaccination laws, effective post-exposure treatment and bite case reporting has contributed to the declining number of human rabies cases in the United States. Since 2003, there have been 31 cases of human rabies, with 3 survivors in the U.S.

In Harris County, rabies was last documented in a dog in 1979, a cat in 1986 and a human in 2009. However, rabies continues to be enzootic in our bat and skunk population. In 2003, Harris County reached a peak of rabid bats with 11.6% of bats submitted for testing returned with positive results. This percentage continued to decrease until 2009 when 10.3% of bats submitted tested positive. Since 2009, the percentage of bats tested positive has further decreased to 5.8% last year. We have also seen fluctuations in positive cases of skunks throughout the last ten years. Skunk rabies hit a peak of 15.9% positive specimens in 2003, followed by a second peak in 2011 with 5.7% positive skunk specimens. Last year, one skunk out of 24 skunk specimens tested positive with a 4.2% prevalence. The continued incidence of rabies in Harris County serves as a reminder to keep pets and livestock current on rabies vaccinations.

The high risk carriers of rabies in Texas are bats, coyotes, foxes, raccoons and skunks. Exposures to these species should be reported to the local rabies control authority (LRCA). When possible, high risk animals involved in potential rabies exposures should be tested to prevent unnecessary post-exposure prophylaxis.

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Pet Health Awareness Holidays

July 15	Pet Fire Safety Day
31	National Mutt Day
August 1-31	National Immunization Awareness Month
15	National Check the Chip Day
September 1-30	Responsible Dog Ownership Month
14	Zoonotic Disease Conference
28	World Rabies Day

Zoonosis Staff

Dipa Brahmbhatt
VMD, MPH, MS
Zoonosis Veterinarian
713-418-1801
dbrahmbhatt@hcphe.org

Tiffany Guidry, BS
Veterinary/Zoonosis Technician
713-418-1828
tguidry@hcphe.org

Websites:
www.hcphe.org/vph
www.countypets.com

Harris County 2003-2013 % Positive Rabies Cases

Year	Skunk	Bat	Equine	All Species Tested
2003	15.9	11.6	0.0	4.2
2004	2.1	8.5	0.0	2.1
2005	1.0	7.5	0.0	1.0
2006	1.0	9.5	0.0	1.0
2007	0.0	9.5	0.0	0.0
2008	0.0	9.5	0.0	0.0
2009	0.0	10.3	0.0	0.0
2010	0.0	9.5	0.0	0.0
2011	5.7	4.2	16.7	4.2
2012	1.0	6.5	0.0	1.0
2013	4.2	5.8	0.0	4.2

Zoonosis: any infectious disease that is transmissible from animals to humans.

Rabies and the Importance of Proper Post-Exposure Treatment

Over the past 100 years, rabies in the United States has changed drastically. More than 90% of cases reported each year to the Centers for Disease Control and Prevention (CDC) occur in wildlife, with the primary reservoirs today being wild carnivores and bats. Prior to 1960, the majority of these cases occurred in domestic animals. The number of human rabies deaths has also declined from more than 100 annual cases prior to 1900 to one or two per year in the 1990's. Animal control and vaccination programs, along with the oral vaccination programs have eliminated the domestic dog as a rabies reservoir in the U.S. Post-exposure prophylaxis treatment has also proven nearly 100% successful. The majority of cases reported to the Centers for Disease Control and Prevention (CDC) annually occur in wild animals like raccoons, skunks, bats, and foxes. All species of mammals are susceptible to rabies, but the primary reservoirs in Texas are bats, skunks, foxes, coyotes and raccoons.

The primary mode of transmission is through a bite of an infected animal. Although rare, transmission can also occur through contamination of mucous membranes, aerosol transmission, and organ transplantations.

How does the disease affect people?

The incubation period in humans can be a few days to several years; however, most cases are apparent within 90 days.

The first signs of rabies are nonspecific and include general weakness or discomfort, fever or headache. These symptoms may last for days. There may also be discomfort or a prickling sensation at the site of the bite. These symptoms progress quickly to cerebral dysfunction, anxiety, confusion and agitation. A person may also experience hallucinations, insomnia and abnormal behavior.

Survival is extremely rare in clinical cases. To date, only 5 documented cases of humans have survived from clinical rabies in the United States.

What are signs of rabies in animals?

The incubation period varies with the virus strain, amount of virus transmitted, site of inoculation, nature of the wound and host immunity. In dogs, and cats, most cases become apparent between 2 weeks and 3 months.

Rabies causes an acute encephalitis and the first signs may be nonspecific. These signs can include restlessness, dilation of the pupils, hyperreactivity to stimuli, anorexia and excessive salivation. Animals often have behavioral changes, and may become unusually aggressive or affectionate. Signs quickly progress within days to cerebral and cranial nerve dysfunction, ataxia, weakness, seizures, paralysis, difficulty breathing and/or swallowing and excessive salivation. Animals will also exhibit abnormal behavior, aggression and/or self-mutilation.

What happens to animals that have bitten someone?

The rabies virus may be excreted in the saliva of infected dogs, cats and ferrets for up to 6 days before they show clinical signs of rabies. This is the reason for the 240 hour (10 day) quarantine of dogs, cats and ferrets following a bite or scratch to a human.

Any person with knowledge of a bite, should report the incident to the local rabies control authority. The local rabies control authority will then determine if the animal can be quarantined at home, a veterinary clinic, or an approved rabies quarantine facility.

During the quarantine period, clinic quarantine animals should be confined and observed daily for 240 hours (10 days) following the bite. Any animals approved for home quarantine must receive a veterinary examination at the beginning and end of the quarantine period, and be confined and observed daily by their owner.

Any illness in the animal should be reported immediately to the local rabies control authority (LRCA). Should signs suggestive of rabies

develop, the animal should be euthanized and the head submitted for rabies testing.

Vaccinations should not be administered during the quarantine period to avoid confusing signs of rabies with vaccination side effects. If the animal is not currently vaccinated against rabies, the animal should receive a rabies vaccination at the conclusion of 240 hour quarantine period.

Other biting animals should also be reported to the LRCA. Management of these animals are based on several factors and will be determined by the LRCA.

What is the protocol for animals with potential exposure to rabies?

All animals with potential exposure to high risk species should be reported to the LRCA. Based on the exposed animals' vaccination status, the LRCA will recommend the protocol for treatment.

Dogs, cats and ferrets that are currently vaccinated for rabies should receive a rabies booster immediately and be kept in strict isolation for 45 days. In Harris County, an animal is currently vaccinated if it has either been vaccinated for rabies within the last 12 months or received 2 rabies vaccinations within 12 months of each other and the latter vaccination is a 3-year vaccine and 3 years have not passed from the date

of the last vaccination.

Dogs, cats and ferrets not currently vaccinated should be placed in strict isolation for 90 days and vaccinated for rabies immediately, 3 weeks after initial vaccination and again 8 weeks after the initial vaccination. For example, a cat is exposed by a rabid bat on July 1, 2014 and was NOT currently vaccinated. This cat should be kept in strict isolation until 9/29/14, with an immediate rabies vaccination and followed by booster vaccinations during the week of 7/22/14 and again during the week of 8/26/14.

Please see the included insert for the post-exposure guide (PEP) for animals exposed to potentially rabid animals.

Where can I get more information on rabies?

www.cdc.gov

www.cfsph.iastate.edu

www.dshs.state.tx.us

Source of Information

Centers for Disease Control and Prevention (CDC)

The Center for Food Security & Public Health
Department of State Health Services

Zoonotic disease fact sheets are available at <http://www.hcphe.org/vph/Publications/index.html>.

Upcoming FREE CE

Our 7th Annual Zoonotic Disease Conference will be held on Sunday, September 14, 2014 at Baylor College of Medicine. Registration is open from July 28-September 5, 2014. Register early as space is limited to the first 200 registrants.

Veterinarians, registered veterinary technicians, certified veterinary assistants and physicians are invited to attend.

TSBVME and TVMA will be petitioned for 6.0 continuing education hours for full attendance. For more information or to register, please visit www.countypets.com or www.hcphe.org/vph.

